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Tuberculosis: Public Health Threat of the Past, Present and Future

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Tuberculosis (TB), the airborne communicable disease that has cloaked planet earth for over 7,000 years, remains a major public health problem worldwide. Without the allocation of appropriate funds for TB education and research at all levels of government—federal, state and municipal—TB will continue to remain a major public health threat well into the future.

Tuberculosis remains the leading cause of death worldwide from communicable diseases. Worldwide, every year, three million persons die of TB and four million new active cases occur. At any one time, there are still approximately 15–20 million TB cases worldwide.

Although TB is now preventable and curable, there continues to exist a vast global reservoir of TB-infected persons that is the source of most future TB cases—worldwide, 1.5 billion persons; nationally, 15 million persons; and in Missouri, there are 250,000 such persons.

For the past five consecutive years, TB cases in the United States have declined. Nationally, cases decreased by 7 percent from 1996 to 1997 (21,337 cases to 19,855). However, in Missouri and some other states in 1997, cases increased (in Missouri, from 224 to 248, an increase of 10 percent). This occurred after experiencing a steady decrease since 1990 when 312 cases were reported. With the decrease in cases nationally, the politicians have already begun to decrease federal funding for TB. We witnessed the same reaction in the '70s and '80s when TB decreased nationally. The result, TB resurged in the latter '80s and '90s. We never seem to learn our lesson. Some of those factors that caused the recent resurgence are still there.

- Increased immigration, international business, and student trainees from countries where TB is highly prevalent. (Foreign born TB cases in Missouri have increased from 5.8 percent of all active cases in 1990 to 21 percent in 1997. Nationally, the foreign born constitute 39 percent of all TB cases in 1997.)
- Increases in the elderly U.S. population with activation of latent TB infection (40 percent of Missouri's TB cases are in the age group over 65).
- A continuing HIV problem, although at present, a relatively small one for Missouri (only 4 dual cases of TB/HIV disease in 1997).
- Increases in the number of "congregate setting institutions"—e.g., correctional facilities, nursing homes, homeless shelters, etc., where TB has a greater chance of airborne transmission.
- Increases in racial and ethnic minority populations. (African-Americans, Asians and Hispanics had 48 percent of all TB cases in 1996, 54 percent of all TB cases in 1997.
- The deterioration of the public health care infrastructure due to decreased funding. This situation was corrected by the mid '90s, but again, present and future funding is already decreasing.

Fortunately, Missouri has had a very active TB control consciousness existing among volunteers and staff of the American Lung Association (ALAEM) of Eastern Missouri and American Lung Association of Western Missouri (ALAWM). They never relinquished dedication to the goal of fighting TB. After all, the American Lung Association

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was founded in 1904 to combat TB which, at the time, was the number one cause of death in the United States.

In 1987, Missouri became the first state to establish a strategic plan to eliminate TB. This plan was designed by the Missouri Advisory Committee for the Elimination of TB (MACET) which is a subcommittee of the ALAEM-ALAWM's joint conference committee. MACET is comprised of a diverse group of TB experts and TB advocates. The implementation of this plan has been carried out by MACET, in partnership with the TB Control Unit of the Missouri Department of Health. To achieve TB elimination, this partnership team of MACET and Department of Health TB Control continues to work with all of the Missouri local health departments, private physicians, hospitals, schools, high-risk groups and many other diverse agencies.

The implementation of the MACET Strategic Plan began in 1990, the year Missouri reported 312 cases. Since then, there was a gradual downward trend in the number of TB cases in Missouri. So, naturally, there was cause for concern with the 10 percent increase in cases (248) in 1997, compared with 224 cases in 1996. Was this a statistical blip on the screen, or did we have a serious new problem on our hands? After reviewing the statistical and demographic data of 1997, and noting the same data thus far in 1998, it would appear that 1997 was a "blip on the screen for Missouri."

Looking at the statistical projections for 1998, it appears that we will close out the year with about 180 cases. It is quite possible that by the year 2000, we will achieve our interim TB elimination goal of 175 cases for a case rate of 3.5 cases per 100,000 population. Case rate for the United States in 1997 was 7.4 and 4.7 for Missouri.

Four of the basic action steps essential for the success of the strategic plan are:

- To insure that all TB suspects and TB cases promptly initiate therapy with four drugs (INH, RIF, PZA, and EMB or SM). Only 50.6 percent of all TB cases achieved this goal in 1995. By 1997, the rate increased to 75 percent.
- To insure that all cases complete the ATS/CDC therapy protocol of no less than 6–12 months (90.2 percent achieved this goal in 1996).
- To insure that all active TB cases receive Directly Observed Therapy (DOT) (58.4 percent of all cases achieved this goal in 1995, and by 1997, 76.6 percent were on DOT).
- To insure identification and examination of all close contacts (highest risk group), and treatment of all found positive for TB infection.

These basic action steps reduce TB transmissibility and the chances for development of both single- and multi-drug resistance.

Drug resistant TB, if not contained, will represent the communicable disease plague of the future. A recent survey by the World Health Organization revealed that drug resistant TB strains occurred in all 35 countries and regions studied, with an overall 12.6 percent of patients resistant to one of four drugs routinely used to treat TB, and 2.2 percent were resistant to two or more of these drugs. The United States in 1997 reported 7.6 single-drug and 1.3 percent multi-drug resistance. Drug resistance TB cases now have been reported in almost every state in the United States. Missouri had a single-drug resistance rate of 7.5 percent and a multi-drug resistance rate of 2.2 percent in 1997.

As we approach TB elimination (World Health Organization definition of elimination is one case per 1,000,000 population) in Missouri, it is essential to have continuing programs of TB Awareness (Think TB) to alert and update the public and the medical profession about this major public health problem that is preventable and curable.

In Missouri, MACET, in cooperation and conjunction with TB control units of the state and local health departments, have sponsored TB Awareness programs annually since 1985. In 1999, a TB Awareness Program was held March 13-23, 1999, with proclamations from the governor and local chief executives. There was a buffet TB Physician Seminar on March 25, 1999, at Ces & Judy's, 10405 Clayton Rd., St. Louis. The keynote speaker was Patricia M. Simone, MD, chief of the Field Services Branch, Division of Tuberculosis Elimination, Centers of Disease Control and Prevention. A panel presented a TB update, including the status of TB in St. Louis city and county.

MACET requested that during the months of March and April 1999, all Missouri hospitals provide one Grand Rounds or staff meeting on tuberculosis as their contribution to TB awareness.

It is important to reduce the reservoir of persons with TB infection to prevent activation of TB disease. Part of the Missouri strategic plan is to detect the high-risk members of this reservoir by routine medical practice and screening programs, and then treat those that are positive for TB infection. Missouri is one of four states that statutorily requires the reporting of TB infection, as evidenced by a positive P.P.D. tuberculin skin test.

For us to eliminate this disease, we must have the cooperation of many community groups, in addition to the ALAEM, ALAWM, DOH and local health departments. We particularly need the cooperation of physicians in the private sector to "Think TB," and treat TB disease and infection promptly with modern anti-TB drugs for 6–12 months. And certainly, we must continue to maintain the TB public health infrastructures throughout the state for the surveillance and management of TB.

Editorial Note: The final case count for tuberculosis in 1998 is 184 cases. If you have questions about tuberculosis, please contact the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 611-2912.

New Tuberculosis Guidelines Call for Tuberculosis Screening and Treatment of All HIV-Infected Individuals

Reprinted with permission from the Epidemiology Newsletter, December 1998 published by the Bureau of Epidemiology, Utah Department of Health.

All HIV-infected individuals should be screened for tuberculosis (TB), and if infected with TB should be provided treatment to prevent the development of active TB disease. However, both preventive and curative TB treatment regimens for HIV-infected people must be carefully evaluated to ensure that they do not cause serious drug interactions with the latest therapies for HIV. New guidelines from the Centers for Disease Control and Prevention (CDC) outline in detail the proper evaluation and treatment of TB in HIV-infected individuals.

According to the guidelines, published in the *Morbidity and Mortality Weekly Report Recommendations and Reports*, October 30, 1998, Vol. 47, RR-20, the most important consideration is to avoid the use of one of the most popular TB drugs, rifampin, in combination with protease inhibitors or non-nucleoside reverse transcriptase inhibitors (NNRTIs), two of the latest available treatments for HIV infection. Rifampin can seriously impair the effectiveness of these antiretroviral therapies.

While HIV-infected individuals previously had to stop taking their HIV medications until TB therapy could be completed, another drug (rifabutin) allows continuation of both regimens. Rifabutin provides the first alternative to rifampin and should generally be used instead of rifampin in all patients taking either protease inhibitors or NNRTIs. Additionally, because of potential side effects and concerns about drug-resistance, health care providers should provide directly observed therapy (DOT) to HIV-infected individuals and carefully monitor them for adverse side-effects and progress.

In addition to avoiding drug interactions, providers can now offer HIV-infected individuals new short-course regimens for preventive treatment. Recent studies have found that a two-month course of multi-drug therapy to prevent active TB is an effective alternative to the year-long regimen of isoniazid previously prescribed for people co-infected with HIV and TB. The shorter regimen is easier to comply with and limits the time patients have to adhere to both TB and HIV regimens.

Critical Need for TB Prevention Among HIV-infected

The guidelines also underscore the importance of identifying TB infection among people with HIV. Because HIV infection so severely weakens the immune system, people infected with both HIV and TB have a 100 times greater risk of developing active TB disease and becoming infectious to others, compared to people not infected with HIV. Early diagnosis and effective treatment of TB among HIV-infected persons is critical to cure TB disease, minimize the negative effects of TB on the course of HIV, and interrupt the cycle of transmission to others. The CDC guidelines therefore recommend that all HIV-infected individuals be tested for TB infection and that all individuals being treated for TB be counseled and tested for HIV.

TB is an airborne, potentially fatal lung disease that now kills more people worldwide than any other infectious disease. Worldwide, TB accounts for one-third of deaths among HIV-infected individuals. It is critical for the optimal treatment of both diseases, that health care providers be familiar with and implement the new TB screening and treatment guidelines for individuals with HIV. Moreover, continued efforts to eliminate TB as a public health problem will be essential to reduce its toll overall and among HIV-infected populations.

Copies of the recommendations can be obtained from the NCHSTP Office of Communications by calling (404) 639-8063, or you can download the document from the Division of TB Elimination Web site at **http://www.cdc.gov/nchstp/tb.**

If you have questions regarding these guidelines or other tuberculosis issues, please contact the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 611-2912.

Continuing Medical/Nursing Education

Continuing Medical Education (CME) and Continuing Nursing Education (CNE) components are available in the paper and electronic versions of the October 30, 1998, MMWR Recommendations and Reports (Vol. 47, RR-20), Prevention and Treatment of Tuberculosis Among Patients Infected with Human Immunodeficiency Virus: Principles of Therapy and Revised Recommendations.

CDC designates this educational activity for a maximum of 2.0 hours in category 1 credit toward the American Medical Association's Physician's Recognition Award. CDC designates this educational activity for a maximum of 2.4 contact hours of CNE credit.

To register and to receive credit, physicians and nurses must return their responses either electronically to the World-Wide Web site http://www.cdc.gov/epo/mmwr/mmwr.html, then go to Continuing Education Program for Physicians and Nurses, or by a card or letter postmarked by October 30, 1999. There is no fee for participating in this continuing education activity.

CME and CNE components are planned for future MMWR Recommendations and Reports.

Programs to Improve the Food Safety System

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Each year, millions of persons in the United States experience foodborne illness, though only a fraction seek medical care and an even smaller number submit laboratory specimens. Foodborne illness remains prevalent in part, because food preparers and handlers at each point in the food chain are not fully informed of risks and related safe-handling practices. Understanding and practicing proper food-safety techniques, such as thoroughly washing hands and cooking foods to proper temperatures, could significantly reduce foodborne illness.

Although food preparation and storage conditions have improved, new food safety concerns have arisen. These critical issues in food safety include:

- emerging pathogens such as multi-drug resistant *Salmonella typhimurium* strain DT 104, *E. coli* O157:H7 and *Campylobacter jejuni*;
- new technologies which allow more rapid processing of meats and poultry and development of new products with different chemical structures that may support the growth of food pathogens;
- globalization of industry and trade, especially since illnesses cross state borders, and most foods or food ingredients are processed or produced in another state or by international trading partners;
- increasing food imports of products which may enter this country daily with limited scrutiny from areas of the world that do not have to follow a uniform set of food safety standards;
- competing priorities and limited resources that constrain the ability of agencies to implement active surveillance and control/education programs; and
- increasing demands for more uniformity and consistency in standards for food products.

Based on provisional data, there were over 1,400 cases of foodborne illness reported in Missouri in 1998. Nearly 80 percent of the reported cases were due to Salmonella and Campylobacter, two of the most common causes of foodborne disease. Rates of both diseases have declined moderately since 1994.

Nationally, preliminary data released in March 1999 by the Centers for Disease Control and Prevention (CDC) also show a decline in the overall incidence of Salmonella and Campylobacter in the seven sites that participate in the Foodborne Diseases Active Surveillance Network (FoodNet).[1] The data show a 14 percent decline in the number of Salmonella infections between 1996 and 1998 and a 14 percent decline between 1997 and 1998 in the number of illnesses caused by Campylobacter.

Because there are many causes of foodborne illness, many points at which foods can become contaminated, and many factors that make some groups of people more susceptible than others, no single preventive measure will ensure the safety of all foods.

National Food Safety Efforts

Six agencies in the federal government have primary responsibility for food safety: the Food and Drug Administration (FDA) and CDC, both agencies of the Department of Health and Human Services (DHHS); the Food Safety and Inspection Service (FSIS), the Agricultural Research Service (ARS) and the Cooperative State Research, Education and Extension Service (CREES), all agencies of the United States Department of Agriculture (USDA); and the Environmental Protection Agency (EPA).

In January 1996, the Foodborne Disease Active Surveillance Network (FoodNet) was established. FoodNet is a collaborative effort among FSIS, FDA and CDC along with selected state and local health departments who began collecting data to better track the incidence of foodborne illness and monitor the effectiveness of food safety programs in reducing foodborne illness.

In January 1997, President Clinton announced the National Food Safety Initiative, a five-point plan to strengthen and improve food safety for the American people and a new early warning system, the Foodborne Outbreak Response Coordinating Group (FORC-G). This partnership of federal and state agencies is to develop a comprehensive, coordinated national foodborne illness outbreak response system among federal, state, and local agencies.

In May 1997, a $43 million Food Safety from Farm to Table initiative provided funding through USDA for measures to improve surveillance, outbreak response, education and research. In October 1997, the Partnership for Food Safety Education was established. The Partnership has launched a multi-year, broad-based public education campaign, Fight BAC! (See sidebar.)

In May 1998, a national computer network of public health laboratories, called PulseNet, was formed to help rapidly identify and stop foodborne illness. The new system enables epidemiologists to respond up to five times faster than before in identifying serious and widespread food contamination problems by performing DNA "fingerprinting" on foodborne pathogens. The Joint Institute of Food Safety Research, created in July 1998, will develop a strategic plan for conducting and coordinating all federal food safety research activities.

Clinton created the President's Food Safety Council in August 1998. This Council, with representatives from USDA, FDA, CDC and EPA, was charged with developing a comprehensive

strategic plan for federal food safety activities and with ensuring that these agencies work together to develop coordinated food safety budgets each year.

The Council planning process began in Kansas City in September 1998. Attendees from 50 states discussed a vision for food safety in the future, identified obstacles and recommended action items including the formation of work groups to further develop the ideas. The vision includes:

- joint planning;
- sharing resources,
- data and communication systems;
- redeploying inspection efforts based on risk and science;
- adopting uniform standards for industry and government;
- enhancing the surveillance and detection of outbreaks from food-borne diseases;
- coordinating government response to outbreaks; and
- educating the public in safer food handling and preparation.

An 18-member Coordinating Committee was named with representation of agriculture, health and epidemiology disciplines from federal, state and local agencies. Six work groups were developed for the following areas:

- Roles and Responsibilities—Capacity and Resource Needs;
- Coordinating Outbreak Responses and Investigations;
- Information Sharing and Data Collection;
- Communication;
- Minimum Uniform Standards; and
- Laboratory Operations and Coordination.

The work groups began meeting in October 1998. The goal is to develop a comprehensive plan to guide budget requests for the federal Food Safety Initiative over the next decade.

Fight BAC!

A variety of educational materials and electronic artwork are available through the Fight BAC! web site at **http://www. fightbac.org**. The Fight BAC! brochures are available in English and Spanish. Click on the "Spread The Word" icon for ordering information.

Fight BAC! brochures (black and white version only) can also be obtained from the Department of Health by contacting the Section for Environmental Public Health, P.O. Box 570, Jefferson City, MO 65102-0570, Ph: (800) 669-7236.

A web site "**http://www.FoodSafety. gov/**" has been developed where government food safety information can more easily be accessed. The site provides links to food safety-related web sites from federal, state and local government agencies. The site was developed by the Center for Safety and Applied Nutrition, FDA, in consultation with the Food Safety Inspection Service, USDA.

The Food Safety Consortium, which consists of researchers from the University of Arkansas, Iowa State University and Kansas State University, has a web site that includes links to food safety information from government agencies, academic institutions and industrial organizations. It can be accessed at **http://www.uark.edu/depts/fsc/othersites.html**. The types of information that can be accessed through this site include: databases; research; academic institutions and national centers; industries and associations; medical sites; and discussion groups.

Increased vigilance by producers, processors and handlers is one factor in food safety. Hazard Analysis Critical Control Points (HACCP) programs are being implemented throughout the animal industry to address all aspects of food safety. What consumers do with the food after they purchase it is another important factor. Proper refrigeration, storage, preparation and clean-up in the home kitchen is critical to reducing foodborne illness. Decreasing foodborne illness requires behavior changes of all involved in the farm to table continuum.

Missouri Food Safety Efforts

In Missouri, a food safety team has been formed with representatives from the Departments of Health (DOH) and Agriculture (DOA), the University of Missouri Colleges of Agriculture, Food, and Natural Resources and Veterinary Medicine and the University Extension Service. Joint activities have been undertaken to: improve communication among agencies and with industry groups; enhance education of consumers, food service workers and inspectors; improve coordination and

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information flow for outbreak detection and response; increase availability of technical assistance for producers and processors; meet the challenges of implementing Hazard Analysis Critical Control Points (HACCP) in new settings; and coordinate funding requests.

The team has undertaken several joint activities to address food safety issues. In December 1997 a first-ever Food Safety Collaborative Workshop was held in Columbia. Over 50 representatives from industry, education and government worked together to draft vision and mission statements and to develop plans in the areas of research, collaboration, training, consumer education and economic value.

After the workshop, a Memorandum of Understanding (MOU) was developed by the team and signed by the directors of the departments of Health, Agriculture, Elementary and Secondary Education, Economic Development, Natural Resources, Missouri University and Lincoln University. The MOU specifies how these departments and institutions of higher education will work together to insure that Missourians produce and consume food that is known for its safety, quality and value.

The food safety team meets bi-monthly to address areas of mutual interest. Both DOH and DOA have included objectives and strategies within their strategic plans aimed at food safety issues and have brought resources to bear to address them.

The Department of Health has:

- increased foodborne disease surveillance and risk management capabilities by dedicating a staff person to develop systems to collect/analyze environmental and foodborne illness data, and through increased capacity of the State Public Health Laboratory to identify and characterize outbreaks;
- increased food processor inspections by devoting additional staff time to providing technical assistance to assure compliance; and
- updated and strengthened the legal structure of food regulation through review of the 1999 FDA model food code and development of updated rules that give Missouri a more science-based approach to food safety.

The Department of Agriculture has undertaken specific actions to:

- address public concern about environmental and food safety issues through improved quality of Missouri-produced meat and milk products;
- ensure consumer confidence in Missouri's food products through consistent and comprehensive regulatory enforcement; and
- improve the production and delivery of wholesome meat products through increased education and outreach, training and collaboration with USDA/FSIS and FDA to assure implementation of federal food safety standards in smaller meat slaughter and processing plants.

REFERENCE:

1. CDC. Incidence of foodborne illnesses: Preliminary data from the foodborne diseases active surveillance network (FoodNet) - United States, 1998. MMWR 1999;48:189–94.

VIDEOCONFERENCES in 1999

The Section of Vaccine-Preventable and Tuberculosis Disease Elimination will sponsor the following Centers for Disease Control and Prevention (CDC) satellite broadcasts:

Immunization Update

September 16, 1999

This program will provide the most current information available in the constantly changing field of immunization.

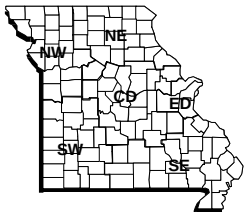
Surveillance of Vaccine-Preventable Diseases

December 2, 1999

This program will provide guidelines for vaccine-preventable surveillance, case investigation and outbreak control.

These live, interactive satellite videoconferences feature question and answer sessions in which participants can address questions to the course instructors on toll-free telephone lines. Continuing education credits will be offered for a variety of professions.

For more information about the courses, site locations and times, contact the immunization representative located in your district health office or the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 699-2313.



Missouri Department of Health
Division of Environmental Health and Communicable Disease Prevention

QUARTERLY DISEASE REPORT

Reporting Period*
July - September, 1998

	Districts											3 Month State Totals		Cumulative		
	CD	** ED	NE	** NW	SE	** SW	*** OTHER	Kansas City	St. Louis City	St. Louis Co.	Spfd. Greene Co.	1998	1997	For 1998	For 1997	5 YR MEDIAN
Vaccine Preventable																
Influenza	0	0	0	0	1	0		0	0	0	0	1	0	1074	227	227
Mumps	0	0	0	0	0	0		0	0	0	0	0	0	0	0	22
Pertussis	1	0	0	2	2	2		3	1	1	0	12	30	28	55	42
Measles	0	0	0	0	0	0		0	0	0	0	0	0	0	1	1
Viral Hepatitis																
A	5	7	0	56	20	22		20	12	8	38	188	307	539	863	902
B	2	4	0	9	2	7		11	18	5	3	61	66	188	259	334
C	2	14	0	4	0	0		24	0	1	1	46	4	86	6	N/A
Non-A Non-B	0	0	0	0	0	0		0	0	0	0	0	1	1	3	18
Unspecified	0	0	0	0	0	0		0	0	0	0	0	0	2	1	1
Meningitis																
Aseptic Meningitis	0	67	13	21	11	0		13	4	70	0	199	46	252	75	126
Meningococcal Disease	0	0	0	1	1	0		5	2	0	0	9	7	29	36	36
Meningococcal Other	1	0	1	2	0	0		0	1	2	0	7	4	37	43	N/A
Enteric Infections																
E. Coli O157:H7	5	0	1	7	3	1		1	0	6	1	25	27	37	45	30
Campylobacter	21	19	13	16	26	29		6	10	36	11	187	190	400	448	480
Salmonella	42	32	4	38	40	22		30	9	31	5	253	131	494	441	420
Shigella	5	6	0	4	3	1		4	9	14	1	47	59	98	184	362
Parasitic Infections																
Cryptosporidiosis	1	0	0	2	2	2		2	0	1	2	12	19	20	28	N/A
Giardiasis	25	40	3	31	25	21		18	55	63	7	288	259	565	545	512
Respiratory Diseases																
Legionellosis	0	0	0	1	0	2		0	2	3	1	9	4	19	7	13
Sexually Transmitted																
AIDS	5	2	0	7	1	4	3	20	45	25	1	113	147	334	349	194
HIV infection	3	2	1	3	7	4	0	30	41	24	1	116	103	334	310	-
Chlamydia	358	122	87	338	212	247		797	763	684	****	3608	-	9253	-	-
Gonorrhea	141	25	20	116	85	56		635	910	492	****	2480	1817	6632	5542	-
P&S syphilis	2	0	0	0	7	0		0	11	4	****	24	40	81	91	-
Tuberculosis																
Active Disease	4	0	1	1	1	1		5	10	3	1	27	41	121	168	-
Zoonotic																
Ehrlichiosis	3	0	1	1	0	1		1	0	3	0	10	15	11	15	N/A
Lyme-like Disease	0	0	0	0	0	0		0	0	0	0	0	4	0	15	41
Rabies (Animal)	0	0	0	0	2	1		0	0	0	0	3	10	22	22	23
Rocky Mountain Spotted Fever	0	0	0	1	0	2		0	0	0	0	3	12	6	22	14
Tularemia	0	1	4	1	1	0		0	0	1	0	8	6	12	11	14

Outbreaks
Foodborne - 5
Waterborne
Nosocomial - 1
Pediculosis
Scabies - 2
Giardia
Hepatitis A
Shigella
Other

Low Frequency Vaccine Preventable Diseases
Diphtheria
Hib Meningitis
Hib other invasive
Polio
Rubella
Tetanus

Low Frequency Diseases
Anthrax
Botulism
Brucellosis - 2
Chancroid
Cholera
Encephalitis
Granuloma Inguinale
Kawasaki Disease - 6
Leptospirosis
Listeria - 3
Lymphogranuloma Venereum
Plague
Psittacosis
Rabies (human)
Reye syndrome
Rheumatic fever, acute
Streptococcal Disease, Invasive, Grp A - 2
Streptococcus pneumoniae, Drug Resistant Invasive Disease
Toxic Shock Syndrome
Trichinosis
Typhoid Fever - 1

*Reporting Period Beginning June 28 and Ending October 3, 1998.
**Totals do not include Kansas City, St. Louis City, St. Louis County, or Springfield
***State and Federal Institutions
****Included in SW District
- Data unavailable

Due to data editing, totals may change

TEAR OUT FOR FUTURE REFERENCE

IMPORTANT NOTICE

Acute Hepatitis A and B Markers Not Included in the Hepatitis Panel Within the 1999 Current Procedural Terminology (CPT) Manual

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In laboratories that follow Health Care Financing Administration (HCFA) reimbursement regulations, current CPT language regarding viral hepatitis laboratory testing may lead to delays in the diagnostic process, delays in initiating therapeutic and control measures, and delays in reporting of disease to health departments.

Immunoglobulin M (IgM) tests for acute hepatitis A and acute hepatitis B have not been included in the hepatitis panel within the 1999 Current Procedural Terminology (CPT) Manual. The acute phases of these diseases will not be identified if the panel is ordered as written in the manual. The Missouri Department of Health suggests that physicians, advance practice nurses, infection control professionals and public health professionals be alert to this problem and suggests the following solutions as temporary measures to overcome the problem.

1. Order IgM tests concurrently with hepatitis panels or, in lieu of panels, order the two IgM's, plus HbsAg, and anti-HCV; i.e., an ad hoc acute panel**.**
2. Request laboratories to design their requisition forms to clearly indicate the conditions under which reflex testing will be performed. Reflex testing occurs "when initial test results are positive or outside normal parameters and indicate that a second related test is medically appropriate". Laboratories may want to do the same for confirmatory testing. Laboratory requisitions should be revised to reflect clear indications to the ordering physician as to when reflex testing will be done; e.g., if the first or primary test is positive (this would be required only if the laboratory bills for the successive reflex testing).
3. Another solution would be for HCFA to include in their quarterly update an alphanumeric replacement code for a revised hepatitis panel that overrides the current CPT-coded panel, #80059. We understand that this is being discussed at the federal level.

This problem developed as a result of changes in the HCFA reimbursement procedures in the CPT Manual made in 1998 for hepatitis A IgM (IgM HAV) and hepatitis B IgM core (IgM HBc). Laboratories are no longer able to bill for these acute hepatitis markers as part of the hepatitis panel # 80059. The tests covered in the panel and reimbursable by Medicare and Medicaid are the total antibody for hepatitis A (IgM and IgG combined) and the total core antibody for hepatitis B (IgM and IgG combined). HCFA requirements for ordering the hepatitis panel and other acute markers include documentation that the tests are medically necessary. Each test must have justification in writing or the necessity for the test must be obvious in the medical record. In the absence of justification or documentation of medical necessity, there is no allowance for reflex testing.

If the physician believes the patient is acutely ill with hepatitis A or hepatitis B, separate tests must currently be ordered *along* with the panel or *subsequent* to getting the results on the total antibody tests. If the physician waits until the panel results are available, there will be considerable delay before requesting the IgM's for both hepatitis A and B. Consequently, there will be delay in providing prophylaxis to the contacts of these infectious cases and in instituting other prevention and control procedures. Prevention initiatives include instructing the infectious cases in how to prevent transmission of the hepatitis A or B virus to other significant contacts in sexual encounters and in home or work settings.

The problem of the hepatitis panel not covering acute markers will eventually be resolved. The CPT Board met in November of 1998 and decided to allow for an acute hepatitis panel in the next edition of the CPT Manual expected in the year 2000.

If you have questions, please contact the Division of Environmental Health and Communicable Disease Prevention at (573) 751-6079.

HIV in the African American Community

A State of Emergency Response Plan

At the United States Conference on AIDS, the Congressional Black Congress announced a State of Emergency in the United States regarding HIV infection rates in African American communities. After reviewing the staggering statistics, it became apparent that the Missouri Department of Health should proactively develop a response plan for the state of Missouri.

This response plan is the result of the Department of Health's collaboration with community partners, other state agencies, and local health departments. This document is intended to assist community based organizations and other entities to develop strategies in response to HIV in the African American community. The document is designed to be customized at the local level to enable these organizations to add their mission and role to enhance their efforts in HIV prevention. The response plan is meant to complement other interventions that have proven effective in the prevention of HIV. In order to leave no one behind, it is imperative that efforts are made at the community level to develop strategies for all Missourians.

VISION

A Missouri free of HIV and the devastating impact that it has on communities, families, and individuals.

GOAL

To reduce the incidence of HIV disease in minority communities, particularly African Americans, who are being hardest hit by the disease. To reduce the impact of HIV disease on minority communities, families, and individuals.

GUIDING PRINCIPLES

- ✔ Assistance is provided on the basis of objective need.
- ✔ Consumer choice is a priority.
- ✔ Access to integrated, state of the art HIV care is assured.
- ✔ Client trust and assurance of confidentiality is maintained.
- ✔ Multi-agency and community approaches are promoted.

OBJECTIVE: To assure that the neediest receive priority assistance

While much of the news on the HIV/AIDS front is encouraging overall, recent data indicate a disturbing trend in African American communities. While overall AIDS deaths are down, the disease remains a severe and ongoing crisis in African American and other racial and ethnic minority communities. According to the National Minority AIDS Council, AIDS is the leading killer of African Americans between the ages of 25 and 44. The largest percentage increases for HIV/AIDS are now among women and youth, racial and ethnic minorities, injecting drug users and their sexual partners.

Strategies

- Review the statewide Community Planning Group (CPG) and Regional Planning Group (RPG) plans for specific interventions planned and targeted to African Americans and submit written plans back to the regions helping them to strengthen their plans. Assure that an adequate portion of prevention and care money is appropriately targeted to African Americans and that funded programs are evaluated for effectiveness.
- Conduct health marketing research in African American communities.
- Continue focused education/outreach and screening programs targeted to African Americans.
- Maximize the screening, education, and outreach potential for Federally Qualified Health Centers, family planning clinics, and alcohol and drug clinics through additional or redirection of resources.
- Build on the CPG statewide plan and develop a comprehensive statewide assessment of need and long term strategic plan.
- Create a position of Minority STD/HIV Programs Coordinator in either St. Louis, Kansas City, or both, to develop and implement the statewide minority strategic plan.
- Develop studies geared to analyze the links between substance abuse, sexual behavior, STDs, and HIV infection rates in African Americans.
- Conduct outreach activities to Historically Black colleges and universities, churches, and high risk groups.
- The Department of Corrections will continue to liaison with external agencies to supply needed and appropriate referrals upon release of HIV positive offenders.
- In accordance with the Department of Mental Health's recommended guidelines, state-operated facilities will continue to identify signs and symptoms, conduct risk assessments, perform HIV testing (or make referrals for testing) and conduct pre/post-test counseling as appropriate.

OBJECTIVE: To assure client access to qualified providers

African Americans must have appropriate access to state-of-the-art HIV care and treatment with effective combination therapies and treatment for opportunistic infections.

Strategies

- Identify provider resources in underserved areas.
- Develop and implement a statewide quality management system for all funded STD/HIV/AIDS screening and counseling, prevention education and treatment programs.

- Conduct a survey to determine providers ability to diagnose and treat HIV and other sexually transmitted diseases.
- Provide education programs targeted to diagnosis, treatment, stigma, and cultural competence.
- Develop adequate referral services to qualified providers at hospital emergency rooms, Women, Infants, and Children clinics, etc.
- Increase provider knowledge of risk factors for HIV and other STDs including linkages with Infectious Disease Specialists in HIV/AIDS.
- Increase provider referral knowledge.
- Address stigma barriers.
- Place case managers on-site at provider sites.
- Develop centers for excellence.
- Develop/support credentialling for physicians who provide HIV care.
- Develop crisis response teams to assist in areas with high prevalence of HIV and STD infection. These teams will consist of a team of experts available to provide special skills and support to expand existing prevention and treatment services for African Americans, and to support development of strategies for enhancement.
- The Department of Corrections will require physicians, through continuing education, to adhere to the Centers for Disease Control and Prevention treatment guidelines.

OBJECTIVE: To address client trust and confidentiality issues

Many members of the African American community have held an underlying distrust of the traditionally white public health system, especially since the Tuskegee Syphilis Study. Adding to this are the persistent inadequacies in social benefits, health care, education, and opportunities for African Americans. Effective prevention programs must address these concerns.

Among African American men who have sex with men, including those who self-identify as gay, fear of homophobia and social norms of some minority communities may have been a source of internal conflict. At the beginning of the epidemic, the absence of national gay leaders and large gay constituencies in the African American population offered few opportunities to mobilize support.

Strategies

- Increase African American representation on the Governor's Council on AIDS through an Advisory Committee on African American issues
- Increase African American representation to the Statewide HIV Prevention Community Planning Group.
- Identify African American communities where lack of trust may exist.
- Engage the assistance of the Office of Minority Health.
- Encourage AIDS Clinical Trials Research at Minority Institutions.
- Utilize providers that have current and trust based relationships with the African American community.
- Engage identified community leaders to assist with trust and confidentiality issues.

- Hire/contract with representatives of the communities at risk including African Americans, HIV+, and those with multiple risk factors.
- Conduct outreach activities to Historically Black colleges and universities, churches, and high risk groups.
- Identify community leaders that have developed trust within African American communities and engage their assistance in prevention and care activities.
- Develop programs that assist in reducing the stigmatization and isolation experienced as a person living with HIV.
- Address factors that prevent disclosure of positive HIV status.
- The Department of Corrections will continue to practice confidentiality per policy and state and federal law.
- The Department of Corrections will continue to collaborate with state and community agencies.

OBJECTIVE: To assure cultural competence in addressing the diversity within African American communities

While African Americans are sometimes viewed as one group, there is, in fact, a wide variety of populations in Missouri included under this heading. Upper socioeconomic status, lower socioeconomic status, Christian, Muslim, inner-city, suburban, descendants of slaves, and recent Caribbean immigrants all fall into the African American heading. Current epidemiological surveillance does not record the social, cultural, economic, geographic, religious, and political differences that may more accurately predict risk.

Strategies

- Improve our surveillance systems to be more responsive to current trends in the different sub-epidemics rather than cumulative trends.
- In collaborations with churches, schools, and other community organizations, the prevention strategies should be introduced by trusted members of the community. Trust must be established, and fear replaced by knowledge.
- Adopt faith-based initiatives in African American churches to address HIV.
- The Department of Mental Health's Division of Alcohol and Drug Abuse will collaborate with grass roots organizations/agencies who provide HIV/AIDS awareness and education to twenty local high schools in Kansas City and to intravenous drug users in the city of St. Louis.
- The Department of Corrections will continue to liaison with state and community providers to gain insight into the diverse needs of varied populations.

OBJECTIVE: To assure better collaboration between State agencies

Strategies

- Enhance state agency collaboration to assure effective interventions and services.
- Increase state agency representation on Governor's Council on AIDS.
- Increase state agency representation on planning bodies for STD and HIV Prevention and Care.

OBJECTIVE: To increase the effectiveness of counseling and intervention services and disease surveillance

Strategies

- Conduct program technical assistance audit of state, federally, and locally funded counseling and intervention and disease surveillance by Local Public Health Agency.
- Review medical providers ability to provide counseling and intervention services.
- Review provider reporting efforts and design programs for improvement.
- Locate counseling and intervention specialists at provider sites visited by the populations most at risk—not just Local Public Health Agency STD clinics.
- Proactively design programs and strategies that encourage African Americans to become HIV testing counselors at HIV testing sites. In the future, it will become increasingly important for African Americans to identify with other African Americans when seeking HIV/STD testing.
- Develop health communication campaigns that show the efficacy of HIV testing in the African American Community.
- Conduct risk assessments for all individuals entering state and federally funded alcohol and drug treatment programs.
- Revise and update reporting requirements for alcohol and drug on-site testing facilities to include race/ethnicity, sex, and age.
- The Division of Alcohol and Drug Abuse will contract with a provider to conduct statewide HIV counseling training to alcohol and drug treatment programs.
- The Department of Mental Health, Division of Mental Retardation and Developmental Disabilities will educate service coordinators, nurses, and other appropriate staff regarding HIV and other STDs.
- The Department of Mental Health will make HIV/STD prevention information available to persons with developmental disabilities who are sexually active.
- The Department of Corrections will continue to monitor HIV+ offender education and treatment modalities to ensure optimum utilization of the most up to date knowledge base.
- HIV and AIDS reporting to the Department of Health is ongoing. This process shall be enhanced as necessary.
- The Department of Corrections will establish offender peer education HIV prevention pilot programs at each non-Institutional Treatment Center site.

OBJECTIVE: To assure comprehensive programs targeted to African American women

Over the past decade the epidemic has increased most dramatically among women of color. Even if women know how to protect themselves from HIV infection, awareness of the facts must be coupled with the skills and support needed to change behavior.

Strategies

- Assure access to female-controlled prevention methods and the skills to use them consistently and correctly.

- Integrate prevention and treatment services.
- Address the intersection of drug use and sexual HIV transmission.
- Integrate medical and behavioral HIV and STD prevention solutions.
- Provide comprehensive, integrated HIV care that addresses the entire spectrum of health care needs and reduces access barriers.
- Assure targeted health communication campaigns and risk reduction programs to African American women.
- Investigate the efficacy of less intrusive methods of HIV testing for women.
- Assure appropriate pre/post-test counseling, testing, and reporting for African American women in alcohol and drug treatment programs serving women and children.
- The Department of Corrections will continue to offer education to offenders through pre and post HIV testing, internal educational videos, handout materials, health fairs, and collaborative pre-release efforts with the Department of Health.
- Currently, all Department of Corrections Institutional Treatment Centers include a compulsory education topic of HIV and STDs and their relationship to substance abuse.
- The Department of Corrections collaborations with drug court contractors indicate a required HIV educational component and its relationship to substance abuse.

OBJECTIVE: To assure comprehensive programs targeted to African American youth

AIDS is the leading cause of death for African American men and women between the ages of 25 and 44. Many of these young adults likely were infected as teenagers. It is estimated that half of all new HIV infections in the United State are among people under 25, and a majority of young people are infected sexually.

Strategies

- Partnership with schools and the Department of Elementary and Secondary Education to integrate, preferably within the context of required comprehensive health education, school-based programs that include a focus on delaying sexual activity **and** to provide information on how sexually active young people can protect themselves.
- Develop partnerships with community parent groups to serve as advocates in the schools for more effective school based prevention programs.
- Partnership with communities and the Department of Corrections to assure the presence of community-based programs that address the needs of adolescents who are most vulnerable to HIV infection, such as homeless or runaway youth, juvenile offenders, and school drop outs.
- Develop targeted, sustained prevention programs for young gay and bisexual men.
- Address relationship between risky sexual behavior and drug-related risk.
- Develop ongoing evaluation of factors influencing risk behaviors and the impact of selected family, social, and cultural factors on risk-taking behaviors among youth and implement targeted health communication campaigns and risk reduction programs for African American youth.
- Offer youth specific HIV integrated, comprehensive care services.

- Partner with church youth outreach in to educate parents regarding talking with their children about sexual health.
- Continue to encourage Community 2000 teams funded by the Division of Alcohol and Drug Abuse to collaborate with the Department of Health in targeting HIV prevention education simultaneously with substance abuse prevention for adolescents.
- The Division of Alcohol and Drug Abuse will continue to disseminate HIV/AIDS awareness and education materials at primary substance abuse prevention workshops and conferences targeting adolescents.
- The Division of Alcohol and Drug Abuse will continue to fund the annual Teen Institute for the Deaf, a primary prevention program, which includes training for all participants through the Red Cross for HIV/STD Prevention.

OBJECTIVE: To assure comprehensive programs targeted to African American men

To compartmentalize African American men who have sex with men in sub-groups does not accurately address the complex issue of high-risk sexual behavior. Many African American men view themselves as sexual beings with no specific orientation marker.

Sexual identity for African American men who have sex with men can be highly situational and context-dependent. Men who have sex with men may identify as gay, bisexual, or heterosexual depending on interpersonal, familial, social, business, or sexual context. A key factor in this identification paradox is that many individuals associate HIV infection with gay-identified men. Men who have sex with men who do not identify as gay may see safer sex messages and communication efforts as irrelevant, and therefore, pose a challenge to targeted HIV prevention efforts.

Strategies

- Prevention Strategies for African American men who have sex with men must follow culturally specific guidelines and research. The strategies must be community based and culturally relevant, designed, and implemented by members of the African American men who have sex with men community.
- Develop targeted, sustained prevention programs for African American men who have sex with men who self identify as gay and bisexual, and prevention programs for those who do not.
- Address relationships between risky sexual behavior and drug-related risk.
- Provide capacity building for identified organizations and/or entities that address HIV/AIDS among African American men.
- Continue focused education/outreach and outreach testing to African American men.
- Develop programmatic strategies that build self-esteem, reinforce positive identity, and instill a sense of respect for self, others, and the community.

If you have questions regarding this plan, please contact Elisa Daues in the Section of STD/HIV/AIDS Prevention and Care Services at (573) 751-6144.

Facts About *E. coli* O157:H7

F.T. Satalowich, D.V.M., M.S.P.H.
Division of Environmental Health and Communicable Disease Prevention

The human large intestine is known to contain over 600 known organisms. *E. coli* is present in the large intestine of all mammals including man. Although the organisms are present, disease and or illness usually do not occur. Disease occurs when an imbalance of the flora occurs or when the host is stressed. Some of the *E. coli* are more pathogenic and virulent than others. Out of the hundreds of strains of *E. coli* that exist in nature and in the bowel of man and animal, *E coli* O157:H7 produces a powerful toxin and can cause severe illness. Of the individuals affected by *E. coli* O157:H7, about two to seven percent of infections lead to hemolytic uremic syndrome.

E. coli present in the bowel are passed in the feces and are present on all material or surfaces contaminated by fecal material, including soil, for a prolonged period of time.

Infection with *E. coli* O157:H7 can cause diarrhea, abdominal pain, and in some cases, intestinal bleeding and kidney failure.

The symptoms of *E. coli* O157:H7 illness generally occur within three to eight days after eating contaminated food. Most people recover in five to ten days.

Fewer than ten *E. coli* O157:H7 cells may be enough to cause foodborne illness in humans. A low infectious dose of two to 2,000 cells has been associated with outbreaks.

E. coli O157:H7 can survive in acidic environments that are lethal to other pathogens, for example fermented foods like sausage and apple cider.

Though potentially deadly to humans, *E. coli* O157:H7 is not pathogenic to cattle. A single cow, or cattle within the same herd, may harbor more than one strain of *E. coli* O157:H7. Some strains are thought to have greater acid tolerance than others.

The source of *E. coli* O157:H7 contamination on carcasses is likely due to fecal contamination during animal production and slaughter operations. Carcasses may become contaminated during hide removal or by cross-contamination with equipment and workers' hands.

Hazard Analysis and Critical Control Point (HACCP) systems in processing plants can reduce but cannot eliminate *E. coli* O157:H7 from foods unless a treatment, such as heat pasteurization or irradiation, is added that will kill the pathogen,.

Current research shows that competitive exclusion has the potential to eliminate *E. coli* O157:H7 from cattle before slaughtering. Competitive exclusion involves the use of non-pathogenic microorganisms to outgrow pathogens in the gastrointestinal tracts of animals.

Fresh manure used to fertilize garden fruits and vegetables may contaminate them with *E. coli* O157:H7. The largest reported *E. coli* O157:H7 outbreak, which caused thousands of illnesses, occurred in Japan in 1996. Radish sprouts were implicated as the source of infection.

If swallowed, fecally contaminated water in freshwater swimming areas may cause *E. coli* O157:H7 infection in both cattle and humans.

A large waterborne outbreak of *E. coli* O157:H7 occurred in Missouri in 1989–1990 when a public water supply became contaminated.

State Public Health Laboratory Report

Newborn Screening—Hypothyroidism, Phenylketonuria, Galactosemia and Hemoglobinopathies

James Baumgartner, B.S., M.B.A., Chief, Metabolic Disease Unit

	Nov 98	Dec 98	1998 Total
Specimens Tested	7,660	8,322	99,272
Initial (percent)	78.6%	80.9%	77,987
Repeat (percent)	21.4%	19.1%	21,287
Specimens: Unsatisfactory	98	117	1,219
HT Borderline	929	1,145	9,664
HT Presumptive Positive	15	8	185
PKU Borderline	0	1	5
PKU Presumptive Positive	0	2	10
GAL Borderline	16	24	90
GAL Presumptive Positive	5	4	27
FAS (Sickle cell trait)	83	105	960
FAC (Hb C trait)	15	22	264
FAE (Hb E trait)	2	4	23
FAX (Hb variant)	9	7	136
FS (Sickle cell disease)	1	4	33
FSC (Sickle C disease)	0	0	15
FC (Hb C disease)	0	3	6

HT = Hypothyroidism, PKU = Phenylketonuria, GAL = Galactosemia, Hb = Hemoglobin, YTD = Year to Date

1998 Index for *Missouri Epidemiologist*

KEY

J/F98 = January/February 1998
M/A98 = March/April 1998
M/J98 = May/June 1998
J/A98 = July/August 1998
S/O98 = September/October 1998
N/D98 = November/December 1998

Tips for Preventing Heat-Related Illness

People suffer heat-related illness when the body's temperature control system is overloaded. The body normally cools itself by sweating, but under some conditions, sweating just isn't enough.

Warning signs of heat exhaustion include: heavy sweating, paleness, muscle cramps, tiredness, weakness, dizziness, headache, nausea or vomiting, and or fainting. The skin may be cool and moist. The pulse rate will be fast and weak and breathing will be fast and shallow.

Seek medical attention immediately if symptoms are severe, or if the victim has heart problems or high blood pressure. Otherwise, help the victim to cool off, and seek medical attention if symptoms worsen or last longer than one hour. If heat exhaustion is untreated, it may progress to heat stroke.

The American Medical Association recognizes two forms of heat stroke. Classic heat stroke occurs without exertion, generally among people at risk—the elderly, infants and persons with chronic illness. Exertional heat stroke usually occurs in young, otherwise healthy adults who are engaging in rigorous exercise in the absence of heat acclimatization (e.g., athletes, construction workers and soldiers).

The best defense against heat-related illness is prevention. Staying cool and making simple changes in your fluid intake, activities, and clothing during hot weather can help you to remain safe and healthy.

Prevention Tips:

- ✔ Increase your fluid intake—regardless of your activity level. Don't wait until you feel thirsty to drink fluids. Ensure infants and children drink adequate amounts of liquids.

- ✔ Limit exercise in a hot environment, and drink 2–4 glasses of fruit juice or a sports beverage each hour.

- ✔ Avoid drinks containing caffeine, alcohol, or large amounts of sugar because they will actually cause you to lose more fluid. Also, avoid very cold beverages because they can cause stomach cramps.

- ✔ Stay indoors and in an air-conditioned environment. If air conditioning is not available, consider a visit to a shopping mall, public library, movie theater, supermarket or other air-conditioned location for a few hours.

- ✔ Contact your local public health agency to see if there are any heat-relief shelters in your area.

- ✔ Ask your doctor whether medications you take affect your body's response to the heat.
- ✔ Electric fans may be useful to increase comfort and to draw cool air into your home at night, but do not rely on a fan as your primary cooling device during a heat wave. When the temperature is in the upper 90s or higher, a fan will not prevent heat-related illness. A cool shower or bath is a more effective way to cool off.
- ✔ If you must be out in the heat, try to plan your activities so that you are outdoors either before noon or in the evening.
- ✔ While outdoors, rest frequently in a shady area so that your body's thermostat has a chance to recover.
- ✔ Wear lightweight, light-colored, loose-fitting clothing. When outdoors, a wide-brimmed hat will provide shade and keep the head cool. Infants and young children should also be dressed in cool, loose clothing and their heads and faces shaded from the sun with hats or an umbrella.
- ✔ NEVER leave anyone in a closed, parked vehicle.
- ✔ Wear sunscreen to protect skin from the sun's harmful rays. Sunburn affects your body's ability to cool itself and causes a loss of body fluids.
- ✔ If unaccustomed to working or exercising in a hot environment, start slowly, pick up the pace gradually and limit your exercise or work time.
- ✔ When working in the heat, monitor the condition of your co-workers and have someone do the same for you. If you are 65 years of age or older, have a friend or relative call to check on you twice a day when hot weather health advisories have been issued.
- ✔ Check regularly on those at greatest risk of heat-related illness:
  - infants and children up to 4 years of age
  - people 65 years of age or older
  - people who are overweight
  - people who overexert during work or exercise
  - people who are ill or on certain medications

Be aware that any sudden change in temperature, such as an early summer heat wave, will be stressful on your body. You will have a greater tolerance for the heat if you limit your physical activity until you become accustomed to the heat. If traveling to a hotter climate, allow several days to become acclimated before attempting any vigorous exercise, and work up to it gradually.

Further information on prevention of heat-related illness can be obtained through the Department of Health Home Page at **http://www.health.state.mo.us/ColdAndHeat/CAndH.html** or by calling the Office of Epidemiology at (573) 751-6128.

Heat Surveillance Summary - 1998

Diane C. Rackers
Office of Epidemiology

Summer 1998 was hot in Missouri as it was across the nation. The life-threatening heat wave that traveled through many states across the nation prompted the Centers for Disease Control and Prevention to issue a media advisory containing tips for managing heat on July 22, 1998. The Department of Health issued one statewide Hot Weather Health Advisory and one statewide Hot Weather Health Warning in 1998. See the sidebar on page 22 for the criteria used when issuing a Hot Weather Health Advisory or Warning.

The statewide Hot Weather Health Advisory was issued on June 25, 1998 when heat indexes reached 106º in St. Louis, Kansas City and Cape Girardeau, 104º in Columbia and 102º in Springfield. The peak of high heat indexes from June 23 through June 29 accounted for 35 percent (163) of the heat-related illnesses reported in 1998. No heat-related deaths occurred during this time period. However, four heat-related deaths occurred in the St. Louis metropolitan area between June 30 and July 2. See Figure 1.

The statewide Hot Weather Health Warning was issued on July 20, 1998 after heat indexes reached 112º in St. Louis, 110º in Kansas City, 108º in Cape Girardeau, 106º in Columbia and 101º in Springfield on July 19. The peak of high heat indexes from July 18 through July 22 accounted for 30 percent (142) of the heat-related illnesses reported in 1998. Four heat-related deaths occurred during this time period. See Figure 1.

In 1997, one statewide Hot Weather Health Advisory was issued on July 25. A peak of high heat indexes from July 12 through July 28 accounted for 76% (176) of the 232 heat-related illnesses reported in 1997.

(continued on page 22)

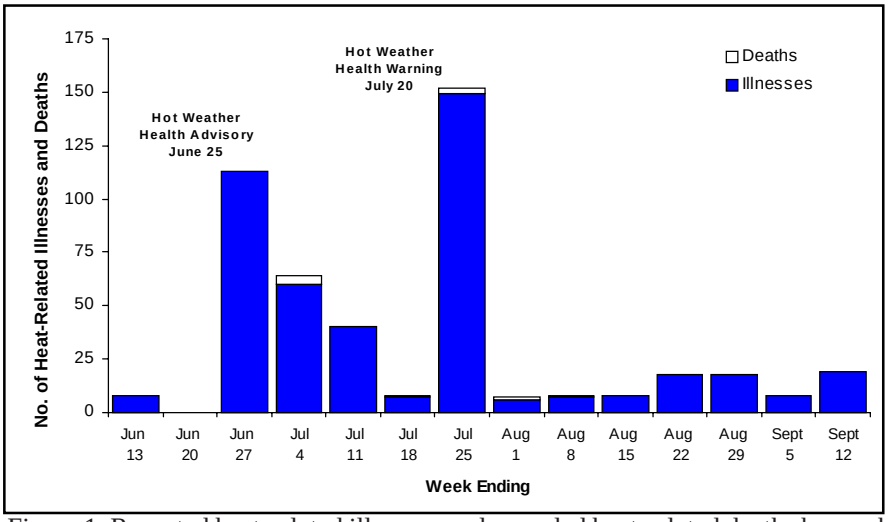

Figure 1. Reported heat-related illnesses and recorded heat-related deaths by week of occurrence, Missouri, Summer 1998.

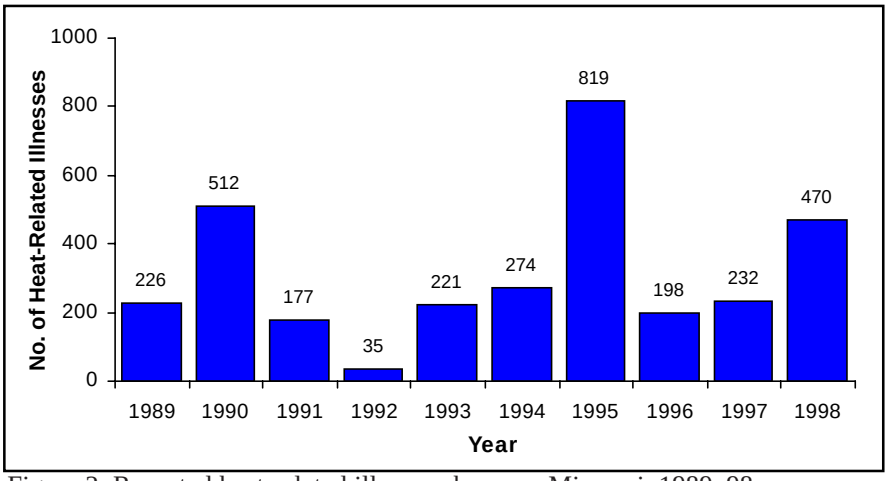

Figure 2. Reported heat-related illnesses by year, Missouri, 1989–98.

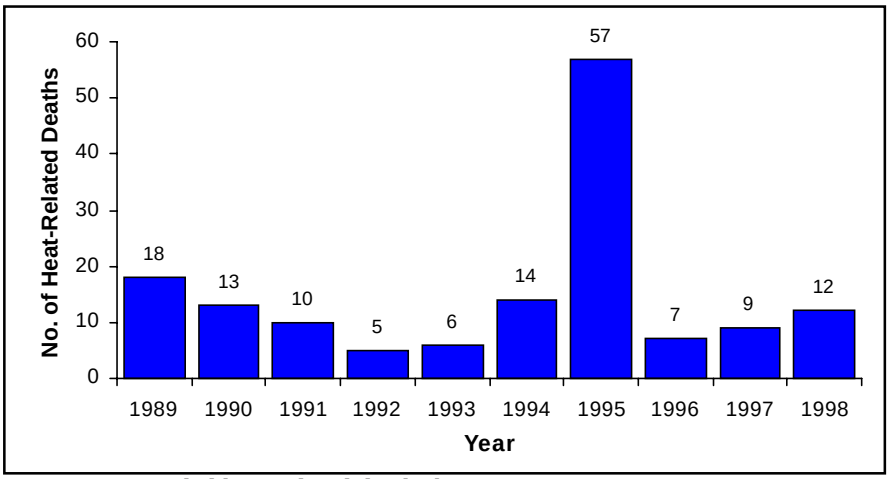

Figure 3. Recorded heat-related deaths by year, Missouri, 1989–98.

(continued from page 21)
In 1998, 470 heat-related illnesses were reported. This is twice the number of heat-related illnesses reported in 1996 or 1997, but still much lower than the 819 heat-related illnesses reported in 1995. See Figure 2.

In 1998, 12 heat-related deaths were recorded. This is three more deaths than recorded in 1997, but considerably lower than the 57 heat-related deaths recorded in 1995. See Figure 3. Considering the high number of heat-related illnesses reported in 1998, one would expect to have seen more heat-related deaths. This lower number of deaths may reflect the effectiveness of public health efforts to educate the public to recognize heat-related illness and seek medical treatment promptly.

Eight (67%) of the heat-related deaths in Missouri in 1998 were in individuals aged 60 or older. The elderly and chronically ill are more vulnerable to heat because they may perspire less and are more likely to have health problems requiring medications that impair the body's natural defenses to adjust to heat.

In 1998, one death in Missouri was a 4-year-old girl who disappeared from a Bible school/day care center. The child was later discovered locked in a car where she may have been for as long as six hours. Infants and children up to 4 years of age are sensitive to the effects of high temperatures and rely on others to regulate their environment and provide adequate liquids. Infants and children should never be left unattended in a parked car or other hot environment.

Department of Health
Stages of Hot Weather Health Advisories

A statewide **Hot Weather Health Advisory** will be issued when heat indexes of 105° in a large proportion of the state are first reached (or predicted). The Department of Health will inform the public about the risks of heat-related illness and urge concern for those at high risk. Monitoring of temperatures and heat indexes will be intensified. An **Advisory** will not be canceled.

A statewide **Hot Weather Health Warning** will be issued when:

1. Heat indexes, measured at peak afternoon temperatures, have remained at 105° or more for two days in a large proportion of the state **and**
2. When weather predictions are for continued high-stress conditions for at least 48 hours in a large proportion of the state.

During a **Warning**, the Department of Health will encourage local health departments to assure that cooling shelters are available and also encourage other community agencies to provide relief from the heat stress. A **Warning** will be downgraded or canceled when heat indexes in a large proportion of the state fall below 105° for 48 hours and the forecast is for 48–72 hours of continued relief from heat stress.

The Department of Health will recommend to the Governor that a statewide **Hot Weather Health Emergency** be declared when:

1. Extensive areas of the state are experiencing high and sustained levels of heat stress (determined when the heat index reaches 105° for three days); **and**
2. Surveillance data demonstrate increased levels of heat-related illness and death statewide; **and**
3. The National Weather Service predicts that hot and humid conditions are likely to continue for several days in a large proportion of the state.

An **Emergency** will be canceled when the heat indexes in a large proportion of the state fall below 105° for 48 hours and the National Weather Service predictions indicate a low probability for the return of severe conditions for the following 48 to 72 hours.

The St. Louis metropolitan area accounted for a large proportion of the heat-related illnesses and deaths in 1998; 291 (62%) of the heat-related illnesses and five (42%) of the heat-related deaths. Although the number of heat-related illnesses reported from St. Louis in 1998 was more than twice the number reported in 1997, the number of heat-related deaths increased by only one. We attribute this to the diligent efforts of St. Louis Operation Weather Survival. This coordinated effort between public health agencies, voluntary organizations, the media and others has been very effective in reducing excess mortality due to stressful weather conditions in the St. Louis area. In 1998, St. Louis Operation Weather Survival issued three Hot Weather Health Advisories and two Hot Weather Health Warnings.

Recognizing the importance of preventing heat-related illnesses, the American Medical Association adopted the following policies[1] at their 1997 annual meeting:

- Physicians should identify patients at risk for extreme heat-related illness such as the elderly, children, individuals with physical or mental disabilities, alcoholics, the chronically ill, and the socially isolated.

Patients, family members, friends, and caretakers should be counseled about prevention strategies to avoid such illness. Physicians should provide patients at risk with information about cooling centers and encourage their use during heat emergencies.

- The American Medical Association encourages patients at risk for heat-related illness to consider wearing appropriate medical identification.
- The American Medical Association supports efforts to develop and disseminate educational materials on the prevention and treatment of heat-related illnesses and encourages state, county and speciality medical societies to work with public and mental health agencies and others in developing and implementing community emergency plans for prevention of heat-related morbidity and mortality.

The Department of Health supports these policies of the American Medical Association. We have printed tips for preventing heat-related illness on pages 19–20 of this issue. We would encourage you to duplicate this information and use it to educate your patients about heat-related illness.

Prompt notification of heat-related illnesses and deaths is essential for an effective heat surveillance system. If you are aware of heat-related illnesses or deaths, please report them promptly to your local health department.

Further information on prevention of heat-related illness and past surveillance data for Missouri can be obtained through the Department of Health Home Page at **http://www.health.state.mo.us/ColdAndHeat/CAndH.html** or by calling the Office of Epidemiology at (573) 751-6128.

REFERENCE:

1. Blum LN, Bresolin LB, Williams MA. From the AMA Council on Scientific Affairs. Heat-Related Illness During Extreme Weather Emergencies. JAMA 1998;279(19):1514.

LATE BREAKERS

☞ **Change in Recommendation for Meningococcal Vaccine for Travelers**—The Centers for Disease Control and Prevention (CDC) no longer recommends meningococcal vaccine for travelers to Saudi Arabia, Nepal, India, Mongolia, Kenya, Burundi and Tanzania. The change in this recommendation was prompted by the lack of evidence of ongoing epidemics of invasive meningococcal disease in these countries. This announcement supersedes the most recent edition of the CDC publication "Health Information for International Travel" which recommends meningococcal vaccine for travelers to these countries. Persons who are going to Saudi Arabia should be cautioned that Saudi officials may require persons who are making religious pilgrimages or seeking employment in their country to produce a current certificate of vaccination against meningococcal disease even though it is no longer recommended by CDC. If you have questions, please contact the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 699-2313.

☞ **Rotavirus Vaccine**—The Advisory Committee on Immunization Practices released its recommendations for the use of rotavirus vaccine in March 1999. Rotavirus affects virtually all children during the first five years of life, and rotavirus infection is the most common cause of severe gastroenteritis in the United States and worldwide. The Food and Drug Administration approved oral, live rotavirus vaccine on August 31, 1998, for use among infants. The full recommendations are on the Internet at **http://www.cdc.gov/epo.mmwr/preview/mmwrhtml/00056669.htm**. If you have questions, please contact the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 699-2313.

☞ The Missouri Information for Community Assessment (MICA) health data system won first prize in the Partnership Technology Games held at the Prevention 99 Conference in Washington, D.C., March 18–21, 1999. MICA allows users to generate tables and maps by specific condition, year of occurrence, age, race, sex, county and zip code. Presently data is available for the following conditions: births, deaths, emergency visits, hospital discharges, inpatient procedures, injuries, and motor vehicle crash and outcome. Through MICA information on obtaining lists, labels, diskettes or tapes for various health professions can be accessed along with counts and costs for obtaining the information in various formats. MICA is available through the Department of Health Home Page at **http://www.health.state.mo.us/MICA/nojava.html**. Access to additional data sets is being planned.

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The Managing Editor is H. Denny Donnell, Jr, MD, MPH, State Epidemiologist. Production Manager is Diane C. Rackers. Questions or comments should be directed to (573) 751-6128 or toll free (800) 392-0272.

Alternate forms of this publication for persons with disabilities may be obtained by contacting the Missouri Department of Health, Office of Epidemiology, P.O. Box 570, Jefferson City, MO 65102-0570, Ph: (573) 751-6128. TDD users can access the preceding phone number by calling (800) 735-2966.

Upcoming Conference

THE ESSENTIALS OF INFECTION CONTROL
9TH ANNUAL CONFERENCE

September 15–17, 1999
Capitol Plaza Hotel, Jefferson City, MO

Purpose:
This conference is a **STARTING POINT** to prepare healthcare professionals as facilitators and resource persons in the prevention and control of common nosocomial infections. It will aid the professional **new to the responsibilities of infection control** to manage the everyday responsibilities of infection surveillance, analysis of disease data, and problem identification and resolution. Important resources for assistance will also be shared.

Sponsors:
Missouri Department of Health, Missouri Hospital Association, Missouri APIC Chapters and other organizations.

Registration:
For a complete conference brochure and registration form, call (573) 751-6113.

You Should Attend If You Are A:
Healthcare professional **new** to the field or to the tasks of an infection control professional, or who assists with:

- the infection control program in any healthcare setting (acute care, ambulatory care, home health, long-term care, mental health, public health, rehabilitation, other)
- consultation on infectious disease prevention and control
- outbreak investigation and follow-up
- surveys, investigations or licensing activities relevant to infection control practices.